Tracker Meeting Minutes

Time: 2024/3/8 10:00 – 12:05

Participants: 常悦, DONG Mingyi (董明义), FAN Yunyun (樊云云), FU Jingyu (付金煜), LI Gang (李刚), LI Yiming (李一鸣), 李瞻, LIANG Zhijun (梁志钧), 刘灿文, GENG Qinglin (耿青林), QI Huirong (祁辉荣), RUAN Manqi (阮曼奇), 佘信, SHI Xin (史欣), WANG Meng (王萌), WEI Wei (魏微), WU Linghui (伍灵慧), XU Zijun (徐子骏), 曾浩, 张瑶, ZHAO Guang (赵光), 赵梅

Minutes: WANG Meng

* QHR: update TPC with pixelated readout. It’s feasible in general, but a few key questions still have to be clarified.
  + What’s the worst deterioration of the single-point spatial resolutions by beam-related space-charge effect? Without waiting for MDI inputs, a reasonable method shall be developed to quantify it.
  + What’s the performance of dE/dx and/or dN/dx?
  + What’s the power density and raw data rate of the innermost layers?

Generally speaking, TPC group shall carry out relevant simulations in a fast fashion.

* DMY: an almost complete status report on DC. It’s feasible, too, and will be reported on Tuesday.
  + As for the plot of PID performance, WM suggested to extend the momentum range down to about 1 GeV/c.
* WW: Preliminary readout scheme of TPC & DC & cost estimation
  + Both schemes are feasible.
  + The cost estimation for TPC is about 35 MRMB, DC about 49 MRMB. The latter is based on commercial products, and could be reduced significantly with customized-ADC.
  + Some R&D’s are still needed for both detectors, particularly pixelated readout of TPC.
* LYM: on CMOS tracker, initial design of module, stave, readout, and barrel layout.
* SX: update outer tracker with Si microstrip
  + The single-layer strip is sufficient.
  + Initial design of barrel module.
* FYY: update the design of LGAD based TOF, in particular the readout scheme.
* The next meeting will be held on the next Friday.